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### **Circular Dichroic Spectra of Elapid Cardiotoxins.**

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Cardiotoxins isolated from elapid snake venoms constitute a chemically homogeneous family of molecules. Within this group several biologically different subclasses exist. We report a comparative analysis of the structure of 20 cardiotoxins using circular dichroism, immunological methods and secondary-structure prediction. It is shown that cardiotoxins fall within two structural subclasses. Toxins of group I are characterized by (a) CD spectra having an intense positive band close to 192.5 nm and a negative trough at 225 nm with no positive band around 230 nm, (b) strong cross-reactivity with a polyclonal antiserum specific for *Naja nigricollis* toxin  $\gamma$  and (c) a high tendency to form a reverse turn in the region of position 11. Toxins of group II are characterized by CD spectra displaying a much weaker positive band at 192.5 nm.

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### **Tertiary Structure of Mouse Epidermal Growth Factor Determined by Two-Dimensional $^1\text{H}$ NMR.**

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The tertiary structure of mouse epidermal growth factor (EGF) in solution (28°C, pH 2.0) was studied by two-dimensional NMR spectroscopy. Proton-proton distance constraints derived from NOESY spectra were used to construct a mechanical molecular model of mouse EGF, which was subsequently checked by means of a preliminary distance geometry calculation. The chain-folds in the two structural domains of mouse EGF were very similar to those previously reported. However, the relative orientations of the two domains were different. Because we could assign much more inter domain NOEs, the relative orientations of the two domains may function as a binding site for the EGF receptor.

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### **Immunoreactive Human Epidermal Growth Factor in the Bile from the Patients with Hepatobiliary Disease.**

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In order to elucidate the presence and concentration of human epidermal growth factor (hEGF) in the bile, specimens obtained from catheters inserted into the intrahepatic or common bile duct or obtained by the puncture of gall bladder were subjected to highly sensitive sandwich enzyme immunoassay for hEGF. The concentration of immunoreactive hEGF ranged from 0.43 to 53.7 ng/mg protein. Bile hEGF in patients with bile tract cancer was higher than those in patients with gall bladder polyp, gall stones, hepatocellular carcinoma, and pancreatic carcinoma. These data suggest the potential role of bile hEGF in the carcinogenesis of bile tract cancer.